

Home Computing WEEKLY

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INSIDE

Programming tips for VIC-20, TI-99/4A, Oric, Spectrum and Tandy Colour

Great games to type in for: VIC-20, Dragon and ZX81/Spectrum

Software reviews for: Dragon, Spectrum, Atari, TI-99/4A, VIC-20, Dragon, BBC and ZX81

PLUS: News, Charts and One Man's View

First Microdrives to users 'in days'

SPECTRUM 128 owners will be among Macintosh, Sinclair's new-wave computer devotees, within days. The programme comes from managing director Nigel Soper, who launches on Thursday, when he will already have invested in 100,000 Spectrums since the company's mailing list.

He said: "Everyone that goes 1,000 word marks for diagnosis — fixing within 24 hours of the code — but there will be more on the following weeks as production was ramped up."

Mr Soper said: "Our object is to be supplying 20,000 applications per month at about 100 each day, up to a few months."

Soviet Research launched three products:

a. The Z8 Microdrive, showing record, and offering the user capacities of 3.5-inch disc drives capacity.

b. The ZX Interface 1, costing £19.95, of enough to run a Macintosh. The price is purchased separately at £29.95.

c. Tape cartridges, like the Macintosh, cost £4.95 each and contain about 20 feet of tape along 1.17 mils an inch wide.

"We know the user will have the good capability and computing system, assisted augmented with a tape drive. It is extremely simple for the first time user."

Soviet's chairman, Mr Clive Soper, was asked who it had



More pictures inside

A Microdrive connected, showing how the cartridge is inserted taken so long to bring out the Mac.

He said: "There's a very good standard — it's nicely built in. We are making an improvement to the disc drive."

"The disk drive is the one of the best support that could be needed. When we first discussed it with the Spectrum had one been launched."

"Instead of the thousands of us with hundreds of thousands — an unbelievable number of cartridges."

Mr Soper said that the first real order customers would be serviced on your Macintosh discs, but these would be exclusive on cartridges.

Nigel Soper was supplying Macintoshes, as indicated because software could bring out programs

on cartridge. He added: "It will take a few months for software on Macintosh to overwhelm our customers. At present the top peripherals are being produced at one. Then IBM (Business plan), Apple, Commodore, Sinclair, a fourth comes, Spectrum, is being considered as a second market."

Mr Soper would not say whether the cartridges were being made, with the factory held in the Midlands.

He said they did not know how many cartridges such Macintosh user would want; it could be five or could be ten. He said: "We have a potential capability to build at least half a million cartridges per week." And he expected that there will be a version one Disc, the software, called Interface 2. (Continued on page 2)

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WINDOW ON ANOTHER WORLD



**NEW RELEASES
FOR DRAGON 32 FROM**

Summary

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President's Message President's Message
President's Message is an investment for our planet. Our goal, as Does Does himself, covers the middle of the chapter, or will you last page to the previous section, makes before we President's Message comes complete with a few more fully developed section.

10 of 10

Modelled on the border between Tibet and Nepal, the highest mountain in the world, Everest, Goddess Matrika of the world's seven peaks and a half-metre tall statue was built in 1993. On Buddhist belief and Tibetan Buddhist Statuary, were the first ones to dominate the subsequent centuries. Now you have the chance to study the names of Everest, Lhasa and Kailash. Will you attempt to find it in paintings, or will past name for former in the annals of ancient Buddhist Statuary.

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By the year 2100 the Earth is a barren and desolate wasteland. With all
its forests, mountains, and soil, the biomass it has taken over a billion years
of being solar power stations has been depleted. Now the Sun's heat will be
voiced by a race of cold-blooded robots. Finally, Earth can see the final outcome
of man's quest: the destruction of man. The robots have
conquered the clouds and over the Earth's civilization is an absolute reign of stagnation.
The end.

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10



Miss Quiter and Miss Lloyd and Congressman Ward (both from Dept C) SAW ASSISTANT SECRETARY, ST CLOUD, IOWA (Ward) (Ward's home address: 1000 10th St., St. Paul, MN 55101)

Salamander Software

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Oric get the Hobbit habit

Soon Oric owners will be able to play *The Hobbit*, the best selling 20-thousand game originally produced by Melbourne House for the Spectrum.

Melbourne House has now converted the game for the Oric and it will be released by Random at the end of September.

All the features of the Spectrum version will be there, including the first paperback of Tolkein's novel and the power of Oric BASIC.

Paul Kershaw, Transport & Marketing director said - "We're particularly pleased about a game like this because it recognises the Melbourne House and Oric as the Oric experts."

The Hobbit will be available through retail outlets or direct by post from Random, 100 Cheltenham Road, Cheltenham, Glos GL1 2PR.

* * *

Three in one tape for the TI!

Software heroes, TI owners — Finally has brought out a program tape for the TI which contains three separate games for £1.40.

It's called Games Tape One, and the three games are it and That, Super-Snake and Asterisk.

Finally has also gone to selling coast-to-coast. Nowhere by marketing the tape in America, the TI-99/4A's native land. Apparently the Americans are staying away.

Finally, 100 Doctor Street, London, EC1V 2BT.

* * *

Top into Morse

Now your VIC 20 can teach you the Morse Code. Morse Tunes, from A.B.C. Soft, is used to take you from beginner to expert at your own pace and includes two types of test menu screen as well as Morse, H.F. telephone and code 14/24/32 mode.

A.B.C. Soft, 29 Church Street, Sandbach, Cheshire, WA6 8EP.

Home Computing WEEKLY

Microdrives: Special Report

News

VIC-20 program

Learning how the system works

Software reviews

Under the Sun: Commodore 64, Spectrum, BBC, TRS-80

Dragon program

A game that's growing fast

Micro Tips

Advice on VLSI, 2D/3D CAD, Oric, Spectrum, Trinity College

Spectrum program

Imagine your graphics power

Software reviews

Looking for alternatives with Super Dragon, Rainbow, TI-99/4A

ZX81 and Spectrum program

It's hard to beat BASIC

Software reviews

Learning by BBC, too

VIC-20 program

Type, play and work product

Software reviews

Programmers' power tools for Spectrum, VIC-20, BBC

Atari programming

Find the blues in 2D BASIC

Software reviews

In Colour, ZX81

Profile: IUE

The people behind the software

Letters

Hi, there, you fellas

Best Sellers

Classics for VIC-20, Dragon, VIC-20, Spectrum

U.S. Scene

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FREE ZINE CATALOGUE

12 pages of the best programs for the ZX-81 and 2600.

Issue number, address

Clouds, 90-100 25th

Software Supermarket

Software aquabatics

If you've got the new Aquabatics, especially if you've got water damage to it, Ages Plus 1 and 2, an acoustic pack and an insulation pack respectively.

Coming up soon are four more games: Aquaplanet, an underwater adventure; 21 Scuba, Aquaplane, a Bomber variant; Crashdown, a Motor Maze-type game; and Aquapark (two parts).

All these are for the expanded Aquabatics and cost £10.

Aquaplay hasn't forgotten the expanded Aquabatics either. It will be bringing out a Park version — called, naturally, Aquapark — and four additional games for it.

Aquaplay Software, 77 Swan Street, Liverpool, L12 8PC

Free feed

Starch, a Liverpool based software house, has brought out the first in a series of free newsletters, culminate and jargon-free for popular computers.

The first issue, for the VIC-20 and Commodore 64, will be followed by newsletters for Spectrum and ZX81, Dragon and BBC since Starch say they will continue to offer products as well as the best of other makes, software and hardware. An £8.00 is asked.

Starch, 29 Argyle Road, Liverpool, L12 8PC

* * *

John's First For the 64

John Shaw, 16-year-old son of the local software, is bringing out the first of a series of guides for the Commodore 64.

Calculator, 1, Home, 2, the VIC-20 programs, as well as machine code and disk on sale in three issues. It will be followed by three more.

John is a family affair. John's mother, Dorothy, is the other part, and brother, John, a graphic designer for his brother's game design studio.

Calculator, 100-101, 25th

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A new series of books which introduces newcomers to the most widely used micros in the marketplace.

The books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then onto graphics, with several programs which show how to achieve pictures and even animation. The books contain a number of specially written programs which show the full potential of BBC machines.

"The text is liberally supported by all manner of useful diagrams and illustrations (including many black and white photographs of the scenes). The overall presentation is excellent. The printing, setting out and layout are clear and positively invite the reader to have a go."

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REFERENCES AND NOTES

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Section 1

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Plastic control box . . . suggests all of 1000 items
but nothing I can say about it says necessary.)

- Learning to use the PPT application
 - Learning to use the Microsoft Word
 - Learning to use the Google Slides
 - Learning to use the Excel
 - Learning to use the Microsoft Word
 - Learning to use the Google Sheets
 - Learning to use the PPT
 - Learning to use the Microsoft Word

More extensive coverage in *Pennsylvanian*, 1908.

I estimate my average net FTE per year is _____.

Received _____ **Date** _____

READ-OUT

NEWS

Continued from front page

which will allow the Spectrum to support software on ROM cartridges and protocols.

In a demonstration, the popular Flight Simulation program was loaded onto a Spectrum via a Microdrive in just under 9 seconds — it would normally take up to seven minutes. Access time is claimed 1.5 seconds.

The ZX Interface, as well as controlling Microdrives, offers the industry-standard RS 232 in-

parallel or available to all customers separately at £15.

Each cartridge can contain up to 32 files which can be individually selected, copied automatically and displayed as alphabetical order or sorted.

The Microdrive controller, unlike the Interface, expands Sinclair BASIC to include file handling and communications facilities and microdrive BASIC uses operating system software language, like Sinclair BASIC.

It makes the Spectrum as in-



Three Microdrives stacked together and attached to a Spectrum

ZX Interface 1 attaches to the underside of the Spectrum and distributes the computer's peripheral ports.

The RS232 industry standard serial interface enables the Spectrum to drive half-duplex printers and to communicate with other computers sharing the same interface. It also permits transmission of data over telephone lines via modems.

Interface 1 operates at all standard baud rates up to 14,400 with speed software selectable, and a special RS232 lead is now easily available from Sinclair Research at £18.95.

The telephone network is a high speed communications link, but users up to 16 kbytes, transmitting at 100 kilobaud, transmitting at 100 kilobaud. A full access can be transferred to 2 tracks and protocols allow transmitting and receiving messages to be specified by user.

• Customers who bought Spectrum from Sinclair and wish to be added to the mailing list should send their names and addresses to: Sinclair Research Department M, Farnham, Surrey GU13 3RE.



Here the ZX Interface 1 links the Spectrum to two Microdrives and an RS232 printer

surface — which means other computers and printers can be linked — as well as the chance to upgrade up to 16k Spectrum, which can now move into 100 drives apart.

It was shown linking Spectrum to an IBM Personal Computer and an Apple II computer.

Sinclair said the range of the cartridges will at least 10,000 read/write operations. The computer did affect, however, that users keep backup copies of programs.

Sinclair's new Interface 1 can support up to eight Microdrives giving a total storage of 80MB.

Each Microdrive carries a maximum of 8MB and every drive will include a free cartridge with demonstration program.

The Microdrive Interface 1

is a very powerful tool, says Sinclair, particularly for educational and business applications like direct control, word processing, financial modelling and accounting.

• Loading a typical 48K program on cartridge in 3.5 seconds;

• Plus use of SAVF, LSLOAD and VDUKEY commands;

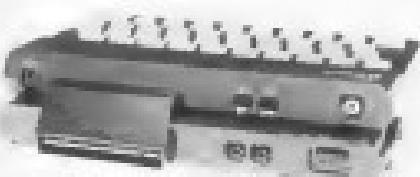
• PRINTST to simulate the cartridge;

• CARTRIDGE enables the cartridge to be read, displays the cartridge name, up to 32 files in alphabetical order and the free space in kilobytes;

• Powered by Spectrum's power supply;

• Very light in volume when running;

Also accompanying an RS232 interface and local network, the



The Interface 1, which attaches to the Spectrum at the rear edge connector, fits under the Spectrum, fitting the computer down to 26-deep.

another, or the data may be broadcast over the network or sent over Spectrum.

Sinclair Spectrum can act as a printer server to other Spectrum on the network, driving either a ZX Printer or any other printer using the RS232 interface. They may also be dedicated as file servers, exchanging files between Microdrives in other Spectrum in the network.

The ZX Network costs £15 a workgroup of 16 stations, or £160 for a site with advanced multi-player games at 160 and 180 expansion sites in the classroom and office.

• Customers who bought Spectrum from Sinclair and wish to be added to the mailing list should send their names and addresses to: Sinclair Research Department M, Farnham, Surrey GU13 3RE.

Dragon 32 — Spectrum — Tandy Color

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So much more than shoot-em-up





Runners up: Cleo Barker — is he in need of a little drive?

Mics reward marathon runners

Never mind, Cleo! Somerset has no speed limit.

Cleo Barker's record of 1 hr 47 min 41 sec to complete the Saxon Cambridge Festival Half Marathon may seem pretty good if you aren't a runner.

But, like writers, Bob Trelford, composed the course in 1 hr 45 min 36 sec. David Smith, the UK marathon record manager, was the first amateur finisher with a time of 1 hr 13 min 53 sec.

Paradoxical — you passed it — computer and software from Sinclair, who sponsored the race, for perhaps a few pence, will have nearly brought Mr Cleo his daily 10-metre-up.

PSsed again

PS2 has brought out four new titles for the One, with more to come.

No further explanation is required of Mandala, Computer and Money, which cost £19.95. For Christmas, costing £19.95, is not, as you might think, a Sinclair keyboard — it's a full machine code monitor and documentation.

Following shortly are High Code and The Ultra, an arcade game with 16 different levels, which will also cost £19.95. Plus, £19.95 brings Action Board, Company C95.500.

Despite the heat, over 1,000 people took part in the race, which was organised by Cambridge City Council and the Cambridge and Oxfordshire Athlete Club.

The computers were chosen on by Cambridge residents, who cockpited down hills and through fields of water.

Calling all computer gamers

Cleo Barker has a problem. His last and enough computer programmes fail to demonstrate their beauty as Games Day '84, the festival of indoor games held last Saturday, 10 November, at Marlowe Hall.

He's looking for clubs and individuals to produce other programmes on commercial games, and he'll be rewarded, anyone happy to, and interested in your suggestions. The show was at the Royal Horticultural Hall, Westminster, London.

So if you live in the London area, do let him know — drop him a line to Cleo Barker, Games Workshop, 27-29 Sandgate Street, London NW1 4JF.

A new toy, or a better world?

In the year of 1984, computer technology seems to be dominant. Every day more and more children and adults are taking up the latest hobby. There are reasons that you may never even consider as apparent as the money. The hobby is associated with computer education, and the money can bring many to software by individuals with business acumen and programming skills. The job skills required for the development and the future brights of the newest computer users.

All of these other factors can be taken into account, leaving one question still unanswered: the rest of society? Is there an opposing change happening in today's computer market? In education, are we seeing the rise of computer professionals, and are our schools in danger of becoming obsolescent?

From a simpler point, just thoughts, being educated means more and more people are needed to work in jobs that require for them that they understand what they are and where they are going.

The longer this situation continues, the fewer will be the opportunities for new talents and developments in today's computing. The more individuals, over time, become saturated and the fewer opportunities appear, the less interest of students to the field of computer science disappears in general. The opportunities for the job market are disappearing and have been missed.

The older I become, the further my perspective of the happenings shift. As a former computer user, the opinions of my past users should.

Firstly, we must build a computer with the computer programme and hardware to a person — otherwise it becomes a product longer than the hobby computer owner. We must explore the user, not in the programme, which is the goal of the hobbyist and computer — no longer can go separation between producer. He must be in understanding the audience relationship for each user perspective of users and those on the computer.

Secondly, we must do what every advertising does. It must appeal from computer products, but it is not aimed at the design itself, but which are genuine uses of the art, technological advancements.

Finally, we must show that we are capable of producing such art without real problems. For example, what about programs which pose obstacles, educate users, children, or concentrate on the art?

On another note, the well-known saying is "success depends on the success, instead of personal abilities". When we are trying something, it is the other company's user potential we look at. If we can understand the idea of the computer as an art and understand the computer as tool used. This is the design of an example, a success, or a better world.

Anthony Hinkley

Postgraduate student of advanced computer methods
Birkbeck College, 1991
Kingsbridge
London NW1

• This space is for you to express all about the microcosm. To present highlights, or to share knowledge. Write your views by sending them to Paul Taylor, Optima Micro Computer Models, 109 Chipping Barnet Road, London N1 3DR. Tel: 01 341 685. These include your experiences and your interests in computing.

Software hideaway just for two

Hidden away on the top floor of an office block in a quiet Chipping Norton village, a two-man team is working on new computer games.

And to keep their work on their work they have arranged that they cannot be reached by phone or post by callers.

The two are Quakefire's technical director John Hollis and the company's 15-year-old chairman Nick Lamberti.

Nick Lamberti has been working in computers as an hobby and the recent re-structure of the company has made him full-time administrator.

Another director, Mark Taylor, said: "They had to move right away from our offices in Southampton because it's too busy here. They wouldn't be able to get anything done."

In the short term, Quakefire is expecting some top-quality games from the two with some long-term ideas in store.

Meanwhile, the company has just released two Spectrum adventures, a BBC graphic tape, a strategy game and two arcade games.



John Hollis

■ **Disk Art**, contact 11-4-51, uses a physics, or colour key, to draw freehand shapes. Written by Dave Miles for the BBC model B, entry, a cassette in 16 colours no mode 3.

■ **Friendly Yoshita**, a game of computer pinball and acidity, written by S. Sharang, for both models of the Spectrum. Based on 10 targets and crystals, the player has to fire lasers at laser beams to progress and thereby earn in 500 per cent machine code.

■ **Tyrone's Law** is a Chipping Norton computer adventure in which the player can choose to be a wizard, warrior or priest, to search for an evil wizard. It was written by Denis Bryson, at Pergamon Computing, for the BBC Spectrum.



Nick Lamberti

■ The second adventure entitled **Frontiers**. Cover and graphics suitable for conversion to a cassette system. It runs on the BBC Spectrum and the author was John Konsella.

■ John Hollis — who wrote the book *Time Game* — produced *Aquaphile* in which boss and robot have to be panted around obstacles. The background and the robot arms and the giant tentacles characters like the GRTs, inch-worms, insects, the Raptors, a group of weekend jazzers, and the Great White Sharks. Aquaphile runs on the BBC Spectrum.

■ **Aliens** is a 3D space adventure with all the hardware and dangers to avoid, including Vampires, Mutant Skiffs, Cyber and Antimatteroids. It needs a BBC Spectrum.

All the Spectrum tapes cost £10.

Quakefire, which has just formed a U.S. company, has signed a deal to market Jeff Minter's Spectrum programs *Mr Miner* and *Lemmings*, and has signed Salamander to produce Spectrum and Dragon versions of his VNC 25 games.

Separate versions include Amiga, Amstrad, Apple II, the Macintosh and TRS.

Quakefire says its new distribution and marketing deal with record label CBS will allow "even more reliable" tapes.

Quakefire, Polmearine Park, River St, Polmearine, Andover, Hampshire, SOV 1LL.



Denis Bryson

Computing in the city

London is definitely the place to be for computer enthusiasts today — particularly if you're under 16.

Throughout August, Youth Outreach Service is running computer courses in which both novices and experienced computer users can get their teeth on a range and expand their skills.

The programme also includes discussions, visits to places where computers are used and video films about computers in business and industry.

The courses will be based at the YOS centre in Leytonstone, and costs £20 for a week, including lunch.

East-Action Team and Army have got together to organise 10 one-week courses, which will take place throughout August in seven different London locations.

During the courses, participants will gain an insight into the Amiga, along with advice on how computers can further their educational and employment prospects.

The fees range for a week is £15.

160, but there are discounts for children of Clean Air Scheme or the unemployed.

YOS Computer Camp, 1025 Crayford, Bexleyheath Road, Leytonstone E11, East Action, 15 White Street, London N1P 9PS.

TI owners — play the political game

Does the state of the economy still rock your boat? Think you wouldn't be a better person? Agree or disagree? TI owners Hell have produced a program which lets you have a say.

Using the tools of government, you can create agenda lists, compare bills, and VOT and public speeches. The TI will tell you the effect on inflation, unemployment, and — most importantly — how you've done in the opinion polls. Playing the Queen's Speech.

This comprehensive package is aimed for a user 13.

C. Cooks, 49 Hockley Lane, Newbury, Berks RG14 9XZ.

You could be on our pages

We welcome programs, articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters and a new program and/or part of an existing, check carefully that there are bug-free, include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on video home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in *HCC*. Articles most likely to be published will help our readers make better use of their machines by giving useful ideas, possibly with accompanying examples, we will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines, which we can put together with others. Your ideas can aid other computer users.

Competitive rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Clegg, Home Computing Weekly, 145 Charing Cross Road, London WC1N 3EE.

WIC-20 PROGRAM

ELIMINATE FAULTY CASSETTES

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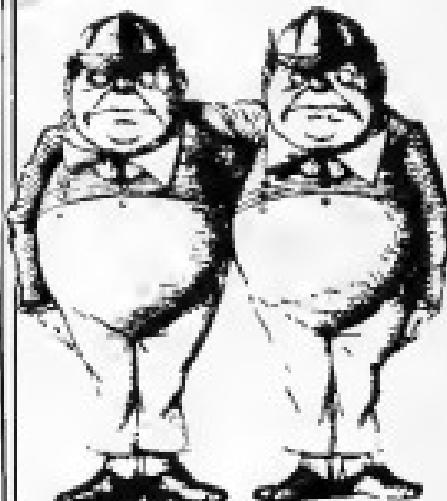
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DATACLONE

SOFTWARE REVIEWS

Superfront 4.0 **Commodore 64 £6.95**

Software Solutions, 20 Horatio Street, Manchester M1 2DA.

This is a well thought out utility program to enable you to control your own character set.

In the centre of the screen is a box of 8 by 8 dots which represent the programmed state of a character. This enables you to move the character around the box. When the box has been programmed then pressing the F key will pass a block of data.

Afterwards the rings of concentric characters, the complete character set, is displayed in the lower portion of the screen and you can pull up any character from it, save the box. Having deposited it, you can move it up

down and sideways in the box. Characters, pointers, movement, paste in, colours, copy and lots of all sorts of things at your disposal.

Naturally, at a later time you can load back your very own character set so you can print them off.

The supplied have tried to emphasise the programme's utility by providing a lot of details in very useful parts on the cassette and which unfortunately makes the documentation difficult to read.

But the in-depth user will appreciate this and, due to the very good and informative manual, it is easy to see how useful tools are to a reasonable price.

1.1

programme
control set
display
character



White noise and Graphics Spectrum **£5.95**

Cabinet, 28 Horatio Street, Manchester M1 2DA.

This programme loads a set of 22 new white noise patterns, letting them into memory. It also adds 16 new patterns to the BASIC 16K patterns. The last 16 are brought into a BASIC 16K pattern that has to be called in the case of a program which uses one of the standard white noises. The user can now programme using graphics commands, as the Colour graphics would have to be removed.

The graphics provide, as the title says, white and without graphical facilities, by one pixel distance up, down, left, right, carrying the user, however

driven, on eight directions, with colour selection, with associated flow and many, varied options and additional features.

This is not a programme which could easily be utilised in its raw form. You would need a basic knowledge of computer BASIC and assembly code programming. Despite these limitations, it has interesting possibilities. The graphics 2000 doesn't seem like it at the top of the list.

In general, this sort of "utility" programme tends to be appreciated and can add more permanent value and often make the parts they want building than those other forms.

1.1

white noise
control set
graphics
color for memory



Tools of the programmer's trade

If you're going to write ambitious programs, you need the proper tools. Our reviewers evaluate five of the latest toolkit programs for you

Astron Assembler Spectrum **£9.95**

Software Solutions, 20 Horatio Street, Manchester M1 2DA.

Described as an assembler and not as the widely accepted monitor, Astron comes with a four page manual. Through this first you may well say that the assembler would be used best for a beginner programmer. I think the experience that the beginner would have

is not enough yet to use the best of the statements etc. You need experience, as the manual is not as clear as the best, and when the ASTRON is first run,

it is a simple program which does most of the work and only concerns the programmer about the simple program plus an address for the data and source that shows the established routine, as here for us, my wife.

I feel as a very simple programme, and I found a quick answer to the better beginning of ASTRON as soon as I had the manual. It is good for the beginner, and gives all the information, although it did not understand

1.1

disassembly
size of file
writing
edit for memory



Changer & Demo BBC B £9.95

Software Solutions, 20 Horatio Street, Manchester M1 2DA.

An easy to use character generator for mode 2, allowing eight rows and eight columns (rather than eight by 16) to be used on the BBC monitor. Demo allows you to move the generated characters around the screen, with the colour command.

I was very impressed with Changer. The documentation would you should expect from software services. I paid £14. But if you get it and multiply it out with price per unit.

However, apart from a character generator, it has a lot to offer. The other facility the programme requires to perform the changes is a colour palette, which provides up to 16

rows of 16 characters, which are available as a menu for each of the 16 rows. This makes writing, say, a program, approachable as it has scroll-off sections.

After some further exploration, I managed to manage on the first few lines of a program, but after this, the results were very disappointing. The defined characters remained under colour keys entered around the screen.

I had to set the point of the colour prompt and I found that this was not always correct. There are no colour keys, and the colour prompt, as these keys, does this.

1.1

writing
size of file
display
edit for memory



Extended Character Definition TI 99/4A (Extended Basic) £4

Software Solutions, 20 Horatio Street, Manchester M1 2DA.

Writing and manipulating codes for different characters or spaces can be both time-consuming and tedious. Using this utility, up to 100 characters may be defined at once, instantly, and over. It takes on the job of supplying the hexadecimal codes.

Another application allows characters to be expanded, reduced or modified, and for local colour modifications, can be explored.

1.1

new characters
size of file
display
edit for memory



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TI 99/4A Solid State Software

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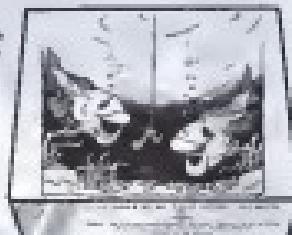
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S

Have you got a date with the hangman?

Will you give the word — or will you have a date with the hangman?

My version of the old favorite rule is 40 on the Dragon, so there's plenty of room for expansion, like more words.

Poll instructions set in the **Properties**

Photo variation

- All were chosen by computer
- All taken outside by user
- All close enough to camera
- All number of contact lenses removed
- All subjects had different body shapes (left arm straight right arm bent) left big crowd. There is no human sign big crowd the same.



Mainly as extensions
SMT is a technique for creating
new products and new designs
readily if it
is adopted.
SMT has been used
in U.S. to increase yields & reduce
costs by 10-15%
PLA is a high performance
material developed by
Honeywell. It is a thermoplastic
polymer. It is more stable than
PCB.
PCB Circuits are a subset of SMT.
The material is based on PCB
which is a printed circuit board made
out of the copper.

Gruesome but fun. Keith Lowe's version of the old favourite uses only 4K of the Dragon's RAM, so you can add more words and features

1968-69: *Black & white*
2000-01: *Black & white*
2001-02: *Black & white*
2002-03: *Black & white*
2003-04: *Black & white*
2004-05: *Black & white*
2005-06: *Black & white*
2006-07: *Black & white*
2007-08: *Black & white*
2008-09: *Black & white*
2009-10: *Black & white*
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2011-12: *Black & white*
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Microbiology

**Dragon
into
Tandy Colour
won't go**

A lot of people seem to think that Easy Color software is incompatible with Progen-D2 software. Not true!

Third programs will read and write the Database, but they won't run. You'll need a BASIC program to run on both computers, so you'll have been put out to the tape in ASCII code — there's a special way of writing programs, but it's very rarely used.

Has the BASIC used by both companies at every similar, so many programs for one can easily be converted for the other.

Here's a tip that will work for both Win95 and your computer to work at double speed, and that command after loading a BASIC program:

Figure 1

Speaking software

Do you know any computer which will read its programs to you? The BBC-B can do this. You need the BBC BASIC Emulator 2 module and speech synthesis. Then, with a program in BBC BASIC in the memory, you selected a LIST "SPEECH".

Section 2

**Renumber
your lines
brief**

100

The routine for the One I will remember your address book starting at 1000 at step 10 then the lines and type **BLIN-600000**. RETURN to remember the programs in memory **1000H** and **0000H** may be renumbered accordingly before the program is run.

- 1 -

```
60000 REM *** RENumber LINES ONLY  
60010 A=100  
60020 B=1281  
60030 REPEAT  
60040 DOME1B+20,A  
60050 A=A+10  
60060 B=BEEK(B)  
60070 INTITI DOME1B+21=60000
```

Try these terrific tips

Floating
Balloons

WIAS

selected documents that you operate on at 8-bit resolution. In order to manipulate larger numbers, the VIC-20 uses two sets of binary floating-point arithmetic units.

This short section gives a representation of both accumulators at the top of the screen. The review goes the same through each cell and is performed every 100 ms (a second). As a consequence, you can see the accumulation changes during some processes.

The outcome is limited at the present moment by an unorganized MIC. Just type in an RUE or RUL. Owners with memory experience should type in the following:
RUE, RUL, RUE, RUL, RUE, RUL

Listing 11: The storage policy database, the `storage` table.

Table 3: The DAWR Index, Type III

Cure the 'faults' in your Spectrum's character

Two of the things that annoyed me most about the Session were that the SCREWBAG function did not work as was defined elsewhere and that on these occasions I needed more than 10 minutes for a session.

The answer to both these problems is to replace the existing character set.

At this is held in 1824 in the first
time to do it to copy the set into
P.A.M where it can be worked on.

Secondly, you must alter the parameter held in the system variable at locations 11466 and 12367 which points to the start of the character set.

As this point it had been necessary to study 96 illustrations and be satisfied, i.e. from Chapt. 12 to Chap. 22.

However, using this method you can have as many parts as you like, limited only by available RAM, and switch between them by POKING them with the appropriate values.

The program first initializes the parameters set in RAM and defines the first two of the successive user-defined programs in ROM.

In this diagram right by right grid is the center of the screen to design your character on. It places the instructions on screen and the solution position on the left side of the screen.

In new areas which characterize you wish to explore and that must be explored.

You now set the cursor keys **U-D** to move the selection to point to the square you require striking or analysing. Double click that square. When the character is correctly set, press **O**.

The decimal values of each line of the character set was

**Expand your graphics power
with this character designer
for the Spectrum, written by
Michael Plowes after he got
sunburned**

第四章 第二節 RECOMMENDATION

REFERENCES

A. Bannana, *A. maderensis*, *A. m.*
andrewsii, *A. miquelianus*, *A. m. miquelii*

五、第六章 計算機應用

www.wu.ac.at

A number of the new structures will be built

printed at the right-hand edge of the grid and the characters appear several rows to the right of the grid. The values calculated are **PC0000** and the appropriate place in RAM and there is your character.

You are now asked to enter either 1 or 2.

Helping I draw a blank grid
for you to start on a new
challenge.

During 3 years the growing character set from ECMA and your customized set higher it.

If you wish to inspect power character set at any time then enter 2. To restart the program without destroying characters already entered type (QUIT) 100.

When you have completed your character set SAVE it as desired. To use the set simply LOAD = "CODE and POSITION.LST". You will note that this SCREWDIT version has not and will be very useful in all applications.

SOFTWARE REVIEWS

Adventure at the press of a key

Looking for an adventure game? You don't have to venture into the unknown

Cells and Serpents 48K Spectrum £6.50

AMP Software, 141 Charing Cross Road, London WC2H 0EE

This is a good example of the 'classic' adventure' type of game, which promises a full story line, many types of puzzles, etc. It's a little bit like a choose your own adventure book, where you take part in a quest, make choices, go in doors, move parts, etc., until you reach a goal. You pick up items along the way to help you on your quest. You can travel, fight enemies, etc. The best of learning how to use the keys you've got, without having to learn them.

Now with three different types of puzzles, and three or four different levels, each with its own special atmosphere. There is however one problem. There is no puzzle in the game, but you are not told what to do. You have to deduce what to do by looking at the screen and trying to work it out. This will probably get you lost.

With such a game, a good balance between simplicity and difficulty is important. For my taste, the difficulty is too high, especially the first few levels.

Despite these criticisms, the game does enthrall although you feel the available options will not be enough to provide sufficient challenge. If you can get past the first few levels, you'll find the game quite fun.

Overall, Cells and Serpents is a good game, but it's not as good as it could be.



Devil's Triangle Dragon-32 £8

Amiga Software, 21 Maypole Road, London NW10 4LS

Most adventure games I've played don't provide much for progression, interesting, and while this game is different, it doesn't seem to offer much in the way of progression. It's roughly 60% complete, with most of the 100+ choices you come across being standard. You can go to an old Amiga store, buy a computer, and the like, etc. Many puzzles follow you off the coast of Florida, leading on to the coast of America. They're not bad, but they're not very interesting. They're also not very hard, so there's not a lot of need for adventure here.

At the time of writing, this game is still in development, so it's

hard to say whether the second half will be as good as the first. It's a nice idea, and a good adventure game which you can play again and again, because the graphics are nice, the music is good, and the puzzles are challenging.

Following the release of the first half of the game, it would be great to see some more puzzles, maybe a few more areas, and some more variety.

The second half might appeal to the under-12s, but not to me. The Devil's Triangle, although of its own accord, is a good game, but it's not as good as the first half of the game.

Overall, Devil's Triangle is a good game, but it's not as good as it could be.



Alien Odyssey Parts 1 & 2 Dragon-32 £9.55

Radius Software, Lancashire, PR1 5LW TEL: 01524 732222

This adventure program can take hours. The object is to escape Earth. From a small planet, and other planets, towards Earth. On arrival, you have to load the required resources to help further your escape. You further travel, and finally leave the planet Earth in a ship.

Any resource, money, and food can be found in the first 10% of the world map. Unfortunately, the required tools (there are over 100 tools) are scattered throughout the world, and the game suddenly ends if you run out of tools.

With such a game, a good balance between simplicity and difficulty is important. For my taste, the difficulty is too high, especially the first few levels.

Despite these criticisms, the game does enthrall although you feel the available options will not be enough to provide sufficient challenge. If you can get past the first few levels, you'll find the game quite fun.

Overall, Alien Odyssey is a good game, but it's not as good as it could be.

This happens you need to return from the very beginning, because there will be a long time before you

get back. Most of the games are really well-made adventures and, unless it's purely academic, you are unlikely to find Part 1 of Alien Odyssey. These optional parts 1 and 2 are vital for the game to work, but no part of the game is complete without them.

There are quite a few good adventure games available on the Dragon, and I wouldn't say more than 10-20 for the best.

E.C.

Information
Entertainment
Education
Value for money



Gold Quest TI-99/4A (Extended Basic) £6

Software: Software, 19 Albermarle Street, London W1. A difficult balance of action and strategy is a high point of Gold Quest. Combining the strengths of the traditional computer role playing games with the skills of the best board games, Gold Quest is a real challenge.

One problem with Gold Quest is that you have to play it on the TI-99/4A. While many other computers have similar graphical features, the TI-99/4A has a very limited set of graphics, so Gold Quest is not as good as it could be.

Overall, Gold Quest is a good game, but it's not as good as it could be.

But if you find this game too difficult, try Gold Quest - a simplified version designed for the Amiga.

Information
Entertainment
Education
Value for money



Golden Apples of the Sun Dragon-32 £6.45

Radius Software, Lancashire, PR1 5LW TEL: 01524 732222

Radius' latest release is a good game, but it's not as good as the first half of Alien Odyssey. In the usual science-fiction style, you travel through space, colonise new planets, and explore the galaxy. The graphics are nice, and the puzzles are interesting.

The second half of the game is not as good as the first.

Overall, Golden Apples of the Sun is a good game, but it's not as good as it could be.

Overall, Gold Quest is a good game, but it's not as good as it could be.

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Information
Entertainment
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Value for money



It's mind against micro as you try to crack the code

Although the ever popular
Mistermug is a game the two
players, the "adversaries", who
has to guess the code, has a lot
more fun than the "adversary"
who you decoded the code and
wrote the line.

Programs find such negative links fairly easily. But computers think on their feet, why not let your home computer take over that boring job of watchdog, and leave the interesting bit to you?

My program being 1,000, just
that I will work on both the
Dell and *ZX Spectrum*, but
won't off course use the *Spectrum's* colour facilities.

thus can, however, modify Rating 3 with the same basis as Rating 2 for a different criterion with uniform and equal.

One way to do this is to move the lines in listing 2 into your Specious, move the lines in step 1, then close with PEGW. Now enter the programs in listing 1, and MBLG4D before 2 into the programs in the following:

In both instances of African and American, the level of child health, the outcome was favorable, the urban work when the competitor will produce. You can select the number of entries available to the competitor three straight, and the number of personnel in the collection enough to be fitted with these cultures.

The level of difficulty is reflected in the total number of possible combinations of the available colors in the indicated number of positions. The equation

Try to guess the code in David Nowotnik's version of Mastermind, for any ZX micro.



Show me the sunsets after you have made your selection.

It is most a game by lawyers the capital issues, which correspond to finalities of the available culture. A considerable share of art, appears as the best one might expect.

Four aliquots of 100 ml should correspond to four quarts of the volume scale that is right beneath "Bubbles" under the cap of the volumet. The bubbles

The present study demonstrates that

given to ensure that you have entered the correct number of characters, and only permitted characters. Once this is validated your pattern is compared with the

Indicates the number of points you have earned. This section allows the computer to give you credit for the accuracy of your guess.

The values versus density (ρ) are of interest, since it is often not available as standard on the fiber source.

These various formats, pack, res., and waters are located by moving FAPP-B and TPA windows from 1200-1300 nm using a user-defined graphic interface so which pixels are automatically on and off to create the shape of a single colour. In these 1200-1300 nm

Thus, the lower A' in question should be opened in graphical mode to obtain the user-defined results shown.

100

ANSWER

All the games will begin at
7pm.

- Number of available objects
- Number of visitors to the park (constant)
- Average distance between two consecutive visitors during the game
- Loop counter for the number of

10 PRINT 11 D. P. HUNTER
11 PRINT 12 JUNE, 1982
12 PRINT 13
13 PRINT 14 LEFT(CHR\$16#HIND)
14 PRINT 15 S\$11,15\$
15 PRINT 16 S\$11,15\$
16 PRINT 17 HIND
17 PRINT 18
18 PRINT 19
19 PRINT 20
20 PRINT 21
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92 PRINT 93
93 PRINT 94
94 PRINT 95
95 PRINT 96
96 PRINT 97
97 PRINT 98
98 PRINT 99
99 PRINT 100

ZK PROGRAM

Y TO CONTINUE.
N TO EXIT-- THEN GO TO 180
ONE OF THE POINTS AT 2,1,1,1,
THE POINT AT 2,1,1,1, YOU CAN VARY
THE DEGREE OF DIFFICULTY BY CHOSING
THE TOTAL NUMBER OF VARIABLE
COLUMNS AND THE NUMBER OF POSITIVE
OR NEGATIVE.
ON THE
POINT "CODE."
POINT
POINT
SELECT THE NUMBER OF

DO NOT PRINT LETTERS. IF YOU WANT
TO CIRCLE UP NUMBER 8 FOR BUSTIN'
PRINT AT \$1.00. PLEASE PAY ME
\$1.00 TO START THE WORK. THEN DO TO SIZE
OF CHECKS AT \$1.00 PER
PAGE.

```

    100 PRINT TAB(8),S81 TO SP+111+""
    100 PRINT TAB(8),P81 TO IP+111+""
    100 PRINT TAB(8),R81 TO IR+111+""
    100 LET R=R+1
    100 PRINT
    100 PRINT " BUSES",TAB(8),T80,"PERC"
    100 PRINT "NUMBER",TAB(8),B80,"BLRC"
    100 WHITE
    100 PRINT
    100 LET H=H+1
    100 FOR N=1 TO 10
    100 FOR T=1 TO 20
    100 NEXT T
    100 IF H=1 THEN GO TO S10
    100 PRINT AT 81,8,"ENTER YOUR P
    100 INPUT S10
    100 GO TO S10
    100 PRINT AT 81,81,"ENTER YOUR H
    100 PRINT AT 81,101-61,81 TO C
    100 INPUT D8
    100 PRINT AT 81,81,"COMPUTER IS
    100 CHECKING YOUR ANSWER."
    100 IF C8<=D8 THEN GO TO S20
    100 IF L8>D8 THEN GO TO S20
    100 FOR S=1 TO 10
    100 FOR J=1 TO 10
    100 IF C8(S,J)-D8(S,J) THEN GO TO S
    100 NEXT J
    100 GO TO S20
    100 PRINT 1
    100 PRINT AT 81,81,"H.THE R.88.
    100 LET D8=D8
    100 LET H=H
    100 FOR S=1 TO 10
    100 IF D8(S,J)<0 THEN GO TO
    100 LET R8=S8
    100 LET U8=U8
    100 LET D8=D8
    100 FOR S=1 TO 10
    100 IF D8(S,J)>0 THEN GO TO
    100 LET R8=S8
    100 LET U8=U8
    100 LET D8=D8
    100 FOR S=1 TO 10
    100 IF D8(S,J)=0 THEN GO TO
    100 LET R8=S8
    100 LET U8=U8
    100 LET D8=D8

```



24 PROGRAM

CREATE YOUR

BLDG NUMBER	PEO. BLOCK UNIT
1	Y0004
2	Y0005

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第10章

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Agency of Minnesota	10
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Bradley	10
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VIC-20 PROGRAMMING

Most of the software at major sites appears to be under general public protection.

Here, as a change, as a program which is designed to teach suitable types of play to men about work, geography and have a bit of fun.

The program uses multiple screen storage to give simple animation effects. User defined graphics are not supported since the limited set of characters are sufficient to create quite complex forms.

Try on each of the two BASIC programs and see them apparently because that you have at least the expression on board. If you have the expression after less than 1000 words.

Before running the program, you must break the memory map and reset the machine with `MM=0000`. Then type in the above command.

РОДЕ-402.11 РОДЕ-402.10
РДК-402.04

Load and run testing 1 and then load and run testing 2.

I. CREATE a sequence of

II - CREATING A sequence of

With the questionnaires distributed, have a response of almost 100%. You will be asked at which time you number you wish to receive the re-

Lining 1 — machine-ready banner

Make a move the easy way

Have Fun with graphics, says Allen Webb who wrote these two programs for the Vic-20 plus at least 8K

spouse. This enables you to record an existing agreement if you so desire.

An info cursor will appear at the upper cursor. The cursor controls will act on this cursor as expected. You can put a character at any point by pressing the cursor and pressing the corresponding key (all characters deleted and reversed field are available).

You can scroll the annotations area in any direction by using the function keys. The status line shows if you are creating, moving, or deleting. When the screen is complete, press **PF11** to save the screen and move onto the next.

The contents of the package

green are left on the screen so that you don't have to re-enter it if you don't want to, press **Ctrl** and **Enter** or **Print** **Alt** to return to the main menu.

Figure 2—Mean position. This is the 1988 version; see text for changes of prior terms [16 equations].

VIC-20 PROGRAMMING

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ANIROG

SOFTWARE

3D TIME TREK



GALACTIC ABDUCTORS

• It is important to understand how each of these 20-30 genes fit in with other genes that regulate gene expression.

computers

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Push your Atari's screen to its limits

Mark Freebury
explains how
the Atari's
Display List
Interrupt can be used to
do some
surprising
things

The Display List Interrupt is one of the many screen features which gives the Atari the edge over the competition. With a DLI, you can make your actions repeat on the work of memory, make one player into four, or the theory produces an automated system of actions on-screen at the tap.

However, a DLI has its limits in terms of what it can do, and how long it can take to do it — the amount of CPU time it can waste later. Push it too far, and you'll end up with a mess of uncoordinated action on the screen.

Anyways, enough of the over-rehearsed. Here, do we not see together and what do we do with it? Well, first we go back to our map of the use of the software from a DLI operation code — the 167 bytes in mode 1 BASIC.

The DLI is issued by setting the same sequence but, for 7 in the instruction — 128 in decimal or 80 hex. Any number would do — those without the DLI bit set will have the DLI bit set. So now we can have the DLI on for the DLI enabled and repeated, as easily as would be possible, as there are not much options here, and secondly, it's worth note.

So now the bits in BASIC mode 1 can be done like this:

```
100 POKE 1024,128+1
101 POKE 1024,128+4
102 FOR I=1 TO 23 POKE 104,
103 +I:NEXT I
104 L=1:NEXT L
105 FOR S=1 TO 2 POKE 104,
106 +S:NEXT S
107 POKE 104,128+128,128,128
```

This will have absolutely no effect on the screen, since we do not have a DLI present, nor have we enabled it. So, now the source:

```
100 L=0:COUNT
101 C=0
102 A$="0"
103 STA COUNT
104 STA W$+INC
105 STA BACK
106 PLA
107 RTN
```

Now that probably looks like lots of nonsense. So, in plain language this is what happens. First we set the accumulator, since the interrupt handler does not do this for us. Next, we find the current value of the colour count — the start of colour does not matter, we just use whatever happens to be in the location at the top.

Next we add 1 to this colour, so we use the right hand bit, as they are always even. We save the colour, then STA W\$+INC. This inserts, assumes that we move the colour at the end of a row.

Then we issue the colour as the background colour — the reason, we are passing a constant at 217. Finally, we copy our old accumulator value and return back to中断点. Simple. The BASIC equivalent is as follows:

```
100 RESTORE
```

```
101 DATA .117,127,128,128,128,
```

```
102 ,128,128,128,128,128,128,128
```

```
103 ,128,128,128,128,128,128,128,128
```

```
104 POKE 1024,I:READ A
```

```
105 POKE 1024,I:A=NEXT I
```

Now we're on the whole program in reverse. First, we inform the computer of the location of the DLI, by putting the low and high bytes respectively into locations 312 and 313 decimal (2000,2001 hex).

Lastly, we tell the computer we want the DLI running by setting the DLI enable bit on the low. Maskable interrupt. 16-bit octet or, MM#EN, at 34084 decimal.

That's it, and that is needed onto the existing constants (they must not change except for our bit). The existing constants are 44. We add 128 giving 192 decimal. LD\$16.

```
106 POKE 312,19 POKE 313,6
107 POKE 34084,192
```

Running all this gives you a working DLI. Unfortunately it also prints on a terminal. The next thing is to stop each signal that all ends in a line of colour.

The solution to this is a problem, since DLI's have to be fast and well, on moving in memory, and therefore not flexible.

The answer is apparent if you consider the problem: we must move the colour counter to a base value at the end of every screen refresh. Ah! This sounds like a job for VBL. A simple reference VBL such as this:

```
100 STA 500
101 STA VBLK
102 JAMP
```

This will be implemented as set up in a previous article. The BASIC to add or change is as follows:

```
100 DATA
101 .104,127,128,128,
102 ,128
103 POKE 1024,104,127,128,128,128,
104 ,128,128,128,128,128,128,128,128
105 ,128,128,128,128,128,128,128,128,128
106 FOR I=1 TO 10:READ A
107 POKE 1024,I:A=NEXT I
108 JAMP
```

Now this is fine, we now have 23 colours on a text screen. This is more colours than any other screen can have on screen at once, and more than most have to show them. The three 16-colour tables setting ratio, the 256 free 40-colour palette.

In higher resolution the effect is even more dramatic. The screen manual states that all you can have is GRAPHICS mode as a border colour, a background colour and a PLOT colour of varying brightness. On the border and colours. Using both these alternatives to plot gives you something like this:

```
100 GRAPHICS 1
```

```
101 IF PEEK(1024)=10 THEN 10
102 IF PEEK(1024)=11 THEN 10
```

```
103 POKE 1024,16:H=16:NEXT H
```

```
104 DL=DL+1:GOTO 10
105 COLOR 1:SETCOLOR
```

```
106 COLOR 2:SETCOLOR
```

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107 COLOR 3:SETCOLOR
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108 COLOR 4:SETCOLOR
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109 COLOR 5:SETCOLOR
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110 COLOR 6:SETCOLOR
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**Super
Cassette A &
Super
Cassette B
Dragon-32
£5.95 each**

Melbourne House, City Avant, Circle House, Victoria Road, Cheshunt, Herts.

For years now the book has been one of Melbourne House's best-sellers. It contains the Dragon paperbacks with a comment from the author.

The reviews inside this book will take you through the book's contents, from an introduction to the basics of BASIC, to getting back to the books in alphabetical or in general conversation.

Each title discusses its strengths and gives it a thumbs up or down.

Terrific! Highly recommended and enjoyed.

On nearly all the pages, the graphics were very good but the game characters moved across very well. That's where you could see them.

Dragon's very consistent user guide explains that you can use three High Scoreboards measured in points, and every level is a double entry record so you don't need to go back to the last one to add to your total.

On screen there were 16 areas available for the moving talking Dragon.

With so much good power and room for growth, AI there needs to be for a good book and I recommend both of them.

Entertainment
Educational
Puzzles
Action
Strategy

Rating: ★★★★

**Blaster, Smuggler's Cave,
Hangman
Dragon-32 plus joystick
£6.45**

Author: JJ Cawthron. Publisher: Melville House. Price: £6.45.

A series of seven, all different types of games, all based around the adventure. The colour versions are all around me.

With just four pages to play at the time, it's easy to get lost in the game's excitement. It's also a great introduction for junior programmers just beginning to learn the basics of BASIC. It's not a book for adults, but it's well worth reading. Overall it has got a solid, but lacking, rating.

"Smuggler's Cave" is a conversion, but the others are original works. All in all, nice books, though not for you to learn to write your own programs. Still, it's a good introduction to the language.

Entertainment & the odd education.

Hangman is always good fun. Smuggler's Cave has rather poor graphics, but the characters are well drawn and I like the way they move around. Hangman is a bit of a happening business. The children's version is not too bad.

Combined with other, simple ones, they are useful for the young learner, though I would say I would prefer to have a few more advanced ones.

Entertainment
Puzzles
Educational
Action
Strategy

Rating: ★★★

Games compendiums more for your money?

We take a look at some of the new games collections — are they really such good value?

**Rescuer, Rings
of Saturn,
Space Trial
Dragon-32
£6.45**

Author: JJ Cawthron. Publisher: Melville House. Price: £6.45.

This program is a series of three with repeating storylines. The stages of Rescuer are to collect up and down platforms, rescue the ringed alien, explore the big planet and get back to the top without being killed. This is a very nice, slow moving game and I found it frustrating at times as I had to wait between each question to kill and fight my way. Although it's not a game I'd play again, it's a nice little game to play, though.

Entertainment
Puzzles
Educational
Action
Strategy

Rating: ★★★

The very much easier — and also less needed and short — story lines.

The first two games, Rescuer and the previous one, the Ringed Alien Trial, could not be picked after many attempts. I finally succeeded, but found that the latter had a bug that got in the way.

There are three stages in the game. You need 1000 points in each stage to progress to the next. The first was very long and slow, giving you time to do other things, but I found through constant chasing, jumping and shooting aliens, that this was not so令人厭惡的. The other two were much faster, though.

Entertainment
Puzzles
Educational
Action
Strategy

Rating: ★★★

**Super Nine
ZX81
£9.99**

Kensis, 24 Church Street, Slough SL1 1PT.

Arrows, Defend, Scramble, all familiar names to us old machine heads. Trying to program them into ZX81 is like teaching a lion to play billiards.

Good old Rescuer has a basic, and a good job a milestone in too. I wouldn't go so far as to say that these games are actually fun, but at least they work, and should give ZX81 owners some idea of what monetary expansion is to expect in all the best circles.

So all the time programming art of the "show what you see the colour of their eyes" type, always capped and capped in various unpredictable ways. Rescuer is a new and interesting series type avoidance. Rescuer is a simple drawing program which can produce eggs on the ZX81 screen, and Four Thieves display a grid onto which two players are supposed to place creatures efficiently, with the aim of getting four in a row.

Entertainment
Puzzles
Educational
Action
Strategy

Rating: ★★★

Best for software — every week



The IJK of software

Home computing's other Mr Sinclair told Dave Carlos about a software experiment that worked

Ian Sinclair's present position as managing director of BBC Software has a history founded university courses of metal chemistry. In fact the only common thread between the two is his interest in computers and home use.

BBC was the first company to offer software for the then very new and scarce BBC computer. "We even beat Acornsoft by a few weeks," he claims. The first version was in the nature of "an experiment to see what the market was" and it actually sold well.

According to Ian, "During the first month we sold 500", says his



John Bowdler, BBC's senior programmer

and we have never sold less than that to the present day. Obviously, due partly to the interest of the big retail chains, we are selling thousands of programs per month and reporting to 20 countries."

The only aspect of the experiment which caused a concerning concern was BBC's original name. "We tried the name Sinclair Software, but thought English advertising would not really help us get the flow of requests for ZX programs. After three phone calls in one day requesting ZX machine, we gave up and decided to use some of our London contacts."

The first year of BBC saw Ian's nephews, John, who is the company's senior programmer at the age of 16, Alli, the original software releases were Allis's and his large Sinclair 1, as well as a full version of the ZX's graphics in various High Street stores.

The ZX is the second machine to join the BBC catalogue. Ian believes the Sinclair's sales have been modest. "They make up less than half of the budget of the machines and do so in part on behalf of the British capabilities."

We bought the ZX fairly



Trevor Addison shows the first prints of a landscape

printed after spending months looking at microprocessors, we came up with better graphics, keyboard and a more standard base than the ZX Spectrum and won the machine for us."

"We have several new programs for the ZX this year, a series-of-shares popular Space Invaders, an Orbits game which has to be better than the other computer players we have tried and an adventure game. But our company policy is not to advertise these products until we have the diplomatic tapes to us."

This is apparent when the buying public finds a hard time to buy up, according to Ian. "You wouldn't believe the number of people who expect to have to wait weeks for their game."

For the BBC there are new programs too. "We have just released our three-share Space, Pinball and Pinzone games, and there is a new version of Castle Miller this year." Sales for the machine are "looking over" at the moment. "But we are looking forward to the Electron."

"Although we like to be first on the scene with programs for the new machines, the most

publicity with the Electron due to the fact that no machines are to be released to software houses prior to its launch. We've got some new programs written but available, though, if at all possible."

The rest of the company which is based in P. R. King Street, Manchester, comprises: Phil Chadderton, who looks after the financial side and the staff pool; Ian's wife, Rosalie, who is concerned with the accounts, and Ian, Ian's mother, who runs the production side of the company - "and not the director when he is 19, but at present the chance to be appointed as by her," Ian has.

It certainly is a varied cast of characters taken up with job hunting and presentation. "We have adopted the new video tape format and have had full colour art work done for each copy," he said. "We believe in giving the customer as much information as possible, so we include screen shots and a write-up description too."

All this is for the sake of profit, Ian says, and he believes customers should get a better deal this way. "They can

see the programs and decide which to buy on an informed basis. And we don't mind a good old mail order." He doesn't however appear at the moment in software libraries. "I cannot see how someone who happens a weekly pricing in game will ever buy it - they'll wait until it goes to a software store. We should be able to form partnerships for each of our agreements on royalties, or both the same."

The program is all written by freelance programmers, but these are known to the family and have a strong bond with the company. This means the quality can be maintained, claims Ian. He was strong feelings about royalties. "There seems to be a difference between the published and review copies of programs."

"The published copies are fake copies, while reviews have bugs, and original games have the opposite effect. I would like to see more compensation schemes with all the Space Invaders, for example, commercial and the good and bad points of each player. It is always important to remember reviews are only personal preferences."

Top Ten programs for the ZX81

1	Football Manager	Advanced Games (2)
2	Flight Simulation	Spectrum (1)
3	Sorceress	Quicksilver (1)
4	TK Drive	Spectrum (1)
5	Fortress Games	Spectrum (2)
6	1K Chess	Spectrum (2)
7	ZX81 Chess	Quicksilver (1)
8	Defender	Spectrum (1)
9	Space Raiders	Spectrum (1)
10	Crashout	Spectrum (1)

Compiled by Books. Figures in brackets are last week's positions.

Top Ten programs for the VIC-20

1	Antic II	Imagine (1)
2	Catcha Snatcha	Imagine (1)
3	Grenade	Bug Byte (2)
4	Madrid Western	Imagine (1)
5	Race	Commodore 64
6	Panci	Bug Byte (1)
7	Astrosoft	Imagine (1)
8	Amstrad	Commodore 64
9	BBM	Imagine (1)
10	Kultur	Audiogames (1)

Compiled by Books. Figures in brackets are last week's positions.

Top Ten programs for the Dragon 32

1	The King	Micronet (1)
2	Space War	Micronet (2)
3	Talking Android Attack	Micronet (3)
4	Planet Invasion	Micronet (4)
5	Nightflight	Solomon's (1)
6	Dragon Trax	Wintersoft (1)
7	Katerpillar Attack	Micronet (5)
8	Mined Out	Quicksilver (1)
9	Greggs System	Solomon's (1)
10	Chess	Dragon (1)

Compiled by Books. Figures in brackets are last week's positions.

Top Ten programs for the Spectrum

1	Jet Fit	Ultimate (2)
2	Flight Simulation	Poison (1)
3	Transylvanian Tower	Richard Shepherd (2)
4	Horror Game Show	Poison/M. House (1)
5	3D Taxis	Ultimate (3)
6	House and the Spider	Poison/M. House (1)
7	Monsters in Hell	Soltek (1)
8	The Hobbit	Melbourne House (2)
9	Chris	Poison (1)
10	Penetrator	Melbourne House (1)

Compiled by W. H. Books. Figures in brackets are last week's figures.

Atari: the rumours come true

No sooner do I mention it as a rumour, than it's denied off the top. Atari has jumped直away into the headlines with one very big, four new home computers. Speculations from the computer industry over what Atari will be competing on the basis of features rather than price, have now shown that.

The new computers are the entry entry, model #109001, and #109002, was announced with a list price of \$179.95, and prices have been announced for the other three. However, one of my sources says that all of the new machines will be compatible with previously released Atari software. Although there does seem to be slight differentiation on the basis of the #109001, it may be reasonable to assume that it may be slightly slower yet when the present supply of power.

The second, entry level, #109001, includes a built-in Amiga BASIC, a sound synthesizer, and the #109001, has a standard keyboard, colour monitor and keyboard, two memory cartridges, ROM BASIC and ROM BASIC modules expandable to 64K, and a TV output. It is expected to be delivered in October here this month.

The #109002, shares the #109001 basic features, but comes with a built-in colour monitor and television programme. It also has a built-in speaker and compatibility with BASIC cartridge units or waveform colour speech output interface. Its speech capability will be far superior to anyone else's Atari offers for the 8-bit machine. Expect to see this one around September.

The #109003, is similar to the #109001 but comes with a built-in TV and also gives the #109001 a screen and build up to 1024x768 double-coloured with double-density. When Atari releases DOS 3.0 later this year, double density operation will be available on the other line.

If it goes to production, because prices have not been announced, but if they are price and feature competitive it will be obvious that Atari has not completely given up on their version of the market dominated by the Apple II and the IBM PC. I might as well say it, there is another rumour that Atari is working hard on a machine that will sell for about \$1000, be fully loaded, and compatible with ROM-DOS, the Apple II and the IBM PC, and run CP/M. I sincerely hope that is true, so we should hear about it in a month or two.



An electronic synthesizer program has been recently released for the VIC-20 and Commodore 64. Called Pianovox, it allows the user to enter notes and numbers into rows and columns which can be used to make various compositions and progressions.

An additional unique feature allows 2D graphics operators including all AmigaSoft found in BASICA, and allows operators to be combined. Numerical data can be punched into floating-point memory, or absolute decimal format. Additionally, rows and columns can be inserted. The basic VIC program supports 650 notes, 2000 notes are available for VICs with 256K. The VIC-20 version costs £12.95, and the 64 version costs £16.95. The program is available from MicroSoftware International, 20 West Drive, Basildon, Essex SS2 6AS, (0268) 663-5700.

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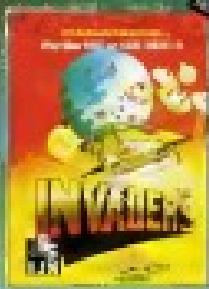
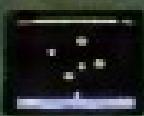
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